

1/9

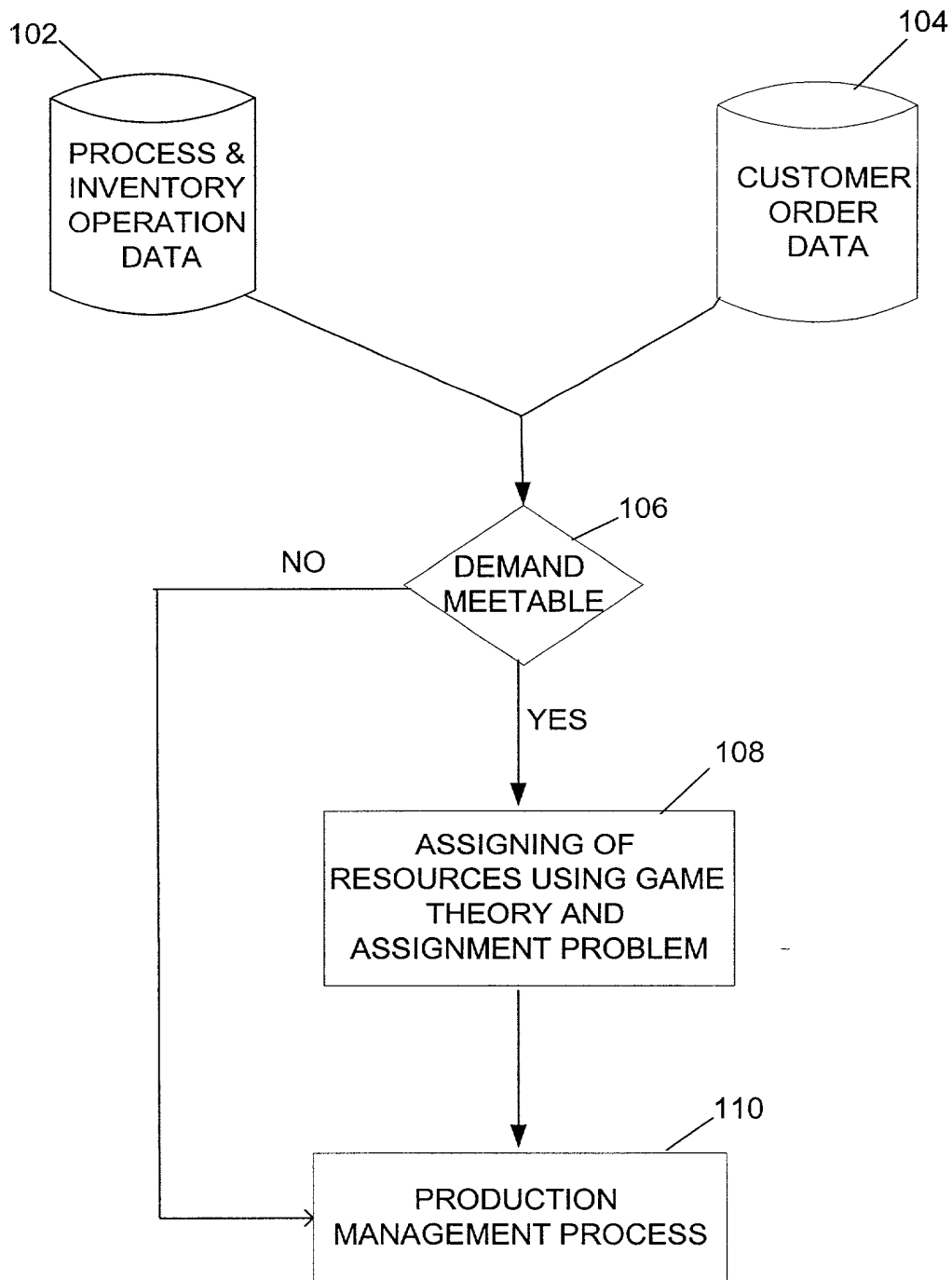


FIG. 1

2/9

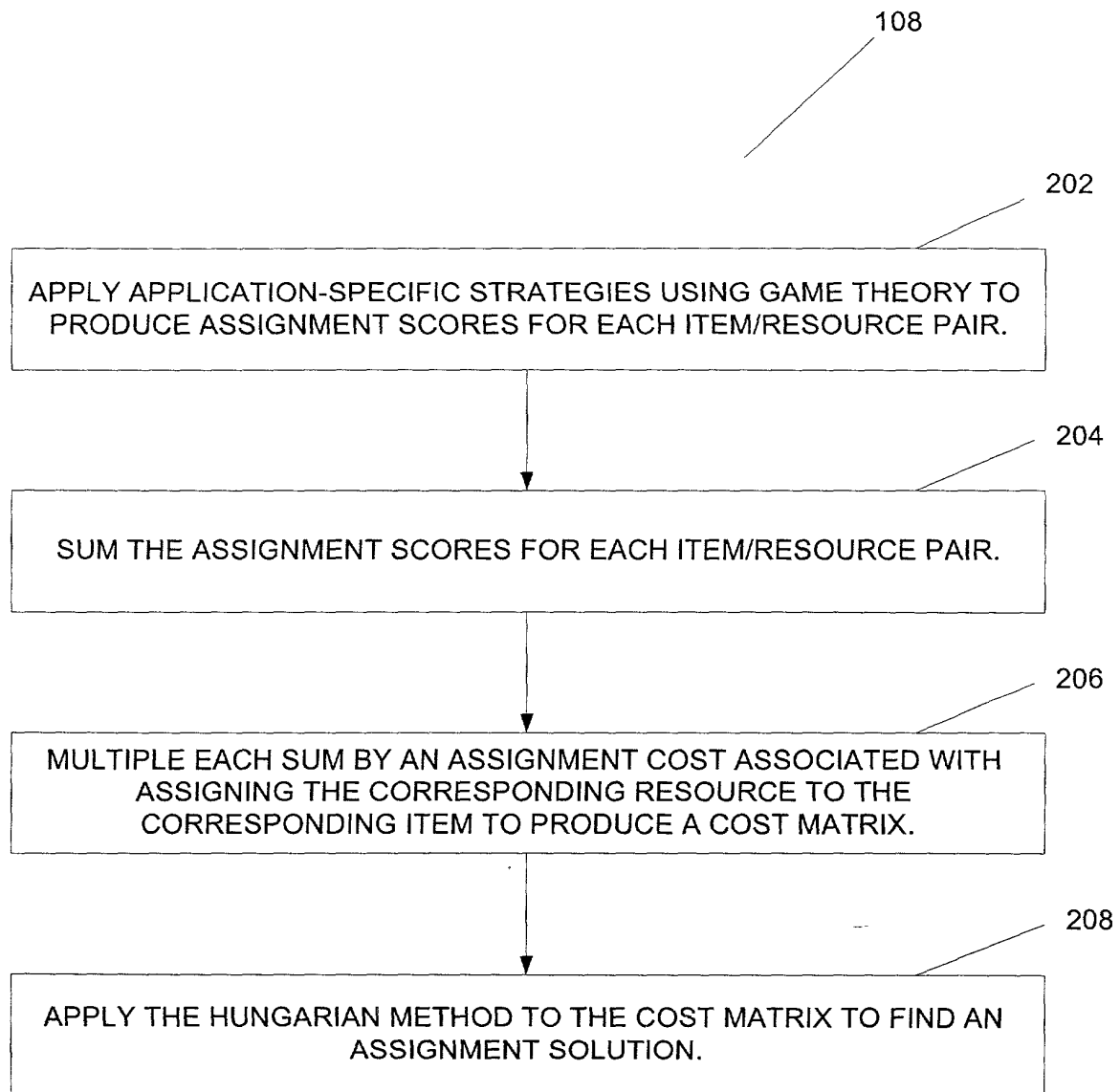


FIG. 2

300

	RESOURCE1	RESOURCE2	...	RESOURCEj	RESOURCE k
ITEM1	C <sub>11</sub>	C <sub>12</sub>			
ITEM 2	C <sub>21</sub>	C <sub>22</sub>			
.					
ITEM i				C <sub>ij</sub>	
ITEM n					C <sub>nk</sub>

FIG. 3

4/9

400



ITEM 1	BUFFER 1	BUFFER 2	BUFFER 3	BUFFER 4	BUFFER 5
STRATEGY 1	0.6	0.8	0.9	0.6	0.9
STRATEGY 2	0.8	0.7	0.0	0.9	0.9
STRATEGY 3	0.0	0.9	0.8	0.0	0.8
STRATEGY 4	0.6	0.6	0.8	0.0	0.9
TOTAL	2	3	2.5	1.5	3.5

402



ITEM 2	BUFFER 1	BUFFER 2	BUFFER 3	BUFFER 4	BUFFER 5
STRATEGY 1	0.8	0.6	0.95	0.75	0.35
STRATEGY 2	0.1	0.9	0.85	0.65	0.65
STRATEGY 3	0.7	0.85	0.95	0.45	0.15
STRATEGY 4	0.9	0.65	0.95	0.95	0.95
TOTAL	2.5	3	3.7	2.8	2.1

FIG. 4

FIG. 400 64240660

5/9

500



	BUFFER 1	BUFFER 2	BUFFER 3	BUFFER 4	BUFFER 5
ITEM 1	2	3	2.5	1.5	3.5
ITEM 2	2.5	3	3.7	2.8	2.1
ITEM 3	2.8	3.8	3.1	2.1	2
ITEM 4	2.3	3.4	3.1	3.9	1.6
ITEM 5	3.8	2.1	1.0	2.5	2.3

502



	BUFFER 1	BUFFER 2	BUFFER 3	BUFFER 4	BUFFER 5
ITEM 1	1.5	2.66	0.784	6.60	0.857
ITEM 2	3.2	2.33	0.54	3.21	3.33
ITEM 3	2.14	1.05	0.645	3.3	2.50
ITEM 4	3.47	1.17	0.645	0.769	3.125
ITEM 5	2.368	4.76	6.0	3.6	4.34

502



	BUFFER 1	BUFFER 2	BUFFER 3	BUFFER 4	BUFFER 5
ITEM 1	3	8	2	10	3
ITEM 2	8	7	2	9	7
ITEM 3	6	4	2	7	5
ITEM 4	8	4	2	3	5
ITEM 5	9	10	6	9	10

FIG. 5

6/9

602



IDENTIFY THE MINIMUM VALUE IN EACH ROW OF THE ORIGINAL N X N COST MATRIX.

604



FOR EACH MINIMUM VALUE IDENTIFIED, SUBTRACT THE MINIMUM VALUE FROM EACH ENTRY IN THE CORRESPONDING ROW.

606



IN THE MATRIX RESULTING FROM STEP 604, IDENTIFY THE MINIMUM VALUE IN EACH COLUMN.

608



FOR EACH MINIMUM VALUE IDENTIFIED IN STEP 606, SUBTRACT THE MINIMUM VALUE FROM EACH ENTRY IN THE CORRESPONDING COLUMN OF THE MATRIX RESULTING FROM STEP 604.

610



IN THE MATRIX RESULTING FROM THE PREVIOUS STEP, DRAW THE MINIMUM NUMBER OF LINES THROUGH THE ROWS AND COLUMNS NEEDED TO COVER ALL ZEROS.

612



IF THE MINIMUM NUMBER OF LINES DRAWN IN 610 IS LESS THAN OR EQUAL TO N THEN FEASIBLE SOLUTION/SOLUTIONS EXIST AND IF EACH RESOURCE IS ALLOCATED TO A BUFFER THEN THAT IS OPTIMAL. MULTIPLE OPTIMAL SOLUTION EXIST IF THE BUFFER AND RESOURCE ALLOCATION CAN BE MADE WITHOUT THE TOTAL COST FUNCTION BEING AFFECTED. IF THERE EXIST NO FEASIBLE SOLUTION (MINIMUM NUMBER OF LINES DRAWN IN 610 IS GREATER THAN N) THEN PROCEED TO STEP 614.

614



SELECT THE SMALLEST UNCOVERED ELEMENT, AND SUBTRACT IT FROM EVERY UNCOVERED ELEMENT; THEN ADD THE SMALLEST UNCOVERED ELEMENT TO EVERY ELEMENT AT THE INTERSECTION OF TWO LINES. PROCEED TO STEP 610.

FIG. 6

7/9

702  
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	BUFFER 1	BUFFER 2	BUFFER 3	BUFFER 4	BUFFER 5	ROW MINIMUM
ITEM 1	3	8	2	10	3	2
ITEM 2	8	7	2	9	7	2
ITEM 3	6	4	2	7	5	2
ITEM 4	8	4	2	3	5	2
ITEM 5	9	10	6	9	10	6

704  
 ↓

	BUFFER 1	BUFFER 2	BUFFER 3	BUFFER 4	BUFFER 5
ITEM 1	3-2=1	8-2=6	2-2=0	10-2=8	3-2=1
ITEM 2	6	5	0	7	5
ITEM 3	4	2	0	5	3
ITEM 4	6	2	0	1	3
ITEM 5	3	4	0	3	4
COLUMN MINIMUM	1	2	0	1	1

706  
 ↓

	BUFFER 1	BUFFER 2	BUFFER 3	BUFFER 4	BUFFER 5
ITEM 1	0	4	0	7	0
ITEM 2	5	3	0	6	4
ITEM 3	3	0	0	4	2
ITEM 4	5	0	0	0	2
ITEM 5	2	2	0	2	3

FIG. 7A

FIG. 7A 6440660

8/9

708



	BUFFER 1	BUFFER 2	BUFFER 3	BUFFER 4	BUFFER 5
ITEM 1	0	4	$0+2=2$	7	0
ITEM 2	$5-2=3$	$3-2=1$	0	$6-2=4$	$4-2=2$
ITEM 3	3	0	$0+2=2$	4	2
ITEM 4	5	0	$0+2=2$	0	2
ITEM 5	$2-2=0$	$2-2=0$	0	$2-2=0$	$3-2=1$

710



	BUFFER 1	BUFFER 2	BUFFER 3	BUFFER 4	BUFFER 5
ITEM 1	0	4	2	7	0
ITEM 2	3	1	0	4	2
ITEM 3	3	0	2	4	2
ITEM 4	5	0	2	0	2
ITEM 5	0	0	0	0	1

FIG. 7B

FIG. 7A is a flowchart



ITEMS	BUFFERS	COST (UNITS)
ITEM 1	BUFFER 5	3
ITEM 2	BUFFER 3	2
ITEM 3	BUFFER 2	4
ITEM 4	BUFFER 4	3
ITEM 5	BUFFER 1	9
TOTAL COST INVOLVED		21

**FIG. 8**

FIG. 8